

4. "On Ground-gru, or ice formed, under peculiar circumstances, at the bottom of running water." By James Farquharson, LL.D., F.R.S., Minister of the Parish of Alford.

The author brings forward in this paper several recent observations on the formation of ice at the bottom of rivers, the conditions of which corroborate the views regarding the cause of that phenomenon, which he presented in a paper on this subject, published in the *Philosophical Transactions* for 1835 (p. 329), namely, that it occurs in consequence of the loss of heat by radiation from the bottom of the water, in a manner precisely analogous to the formation of hoar-frost on the surface of dry land, as first explained by Dr. Wells. He then answers some of the objections to that theory propounded in an article, under the title of *GROUND-GRU*, in the *Penny Cyclopædia*, and shows that those objections are founded in error, and possess no validity.

5. "Meteorological Observations made at the Magnetic Observatory at St. Helena, from February to October 1840." By Lieut. J. H. Lefroy, R.A.

6. "Meteorological Observations made at the Magnetic Observatory at Toronto, Upper Canada, from January to October 1840." By Lieut. E. J. B. Riddell, R.A.

7. "Observations on Magnetic Direction and Intensity made at the Observatory at Milan during the 24th, 26th and 27th of January 1841." By Prof. Carlini.

8. "Note on an irregularity in the Height of the Barometer, of which the argument is the Declination of the Moon." By Sir John William Lubbock, Bart., V.P. and Treas. R.S.

In the *Companion to the British Almanac* for 1839, the author inserted some results which were obtained with a view of ascertaining the influence of the moon on the barometer and on the dew-point. Mr. Luke Howard's researches on this subject having recalled his attention to that paper, he found that some of the results he had given appeared to indicate that the moon's position in declination influences the barometer. In order to render this more manifest, he combines in the present paper all the observations he gave in the *Companion to the British Almanac* in three categories. These observations correspond to different angular distances of the moon from the sun, or times of transit; but as the inequality of the ocean, of which the argument is the moon's declination, is independent, or very nearly so, of the time of the moon's transit, it is probable that so also is that in the height of the barometer. In this case we may with propriety combine in the same category observations which correspond to similar declinations, although to different times of transit. The results stated by the author seem to indicate an elevation of nearly one-tenth of an inch for 17 degrees of declination.

The inequality has a contrary sign to the inequality of the same argument in the tides of the ocean.

April 1, 1841.

The MARQUIS of NORTHAMPTON, President, in the Chair.

Bartholomew Parker Bidder, Esq., and Julian Jackson, Esq., were balloted for, but not elected into the Society.

The following letter, addressed to the President, was read :—

“ 4, Trafalgar Square,
London, March 25th, 1841.

“ MY LORD,—I have the honour of transmitting to Your Lordship for presentation to the Royal Society, an original portrait of *Sir Isaac Newton* by *Vanderbank*, a Dutch painter of some note in that age.

“ This picture has now been many years in my possession, and the tenure by which I have kept it (as a collateral descendant of so illustrious a man) was too flattering not to have been a source of great personal gratification.

“ But I consider such a portrait to belong of right to the scientific world in general, and more especially to that eminently distinguished Society of which Newton was once the head, and which is now so ably presided over by Your Lordship.

“ I have, therefore, to request Your Lordship will do me the honour to present this original portrait of Sir Isaac Newton to the Royal Society in my humble name.

“ Accident having destroyed some of the papers of my family, I am unable of myself to trace the entire history of this portrait, but I believe more than one member of the Royal Society is competent to do so, and it is well known to collectors; and a small mezzotinto engraving of it was published about forty years ago. It was painted the year before Newton died, and came into the family of the celebrated Lord Stanhope, who left it by his will to my grandfather, the late Dr. Charles Hutton, a distinguished member of the Royal Society, expressly on the well-authenticated account of that eminent mathematician having been remotely descended from Sir Isaac Newton, in the following way, as I find on a family manuscript; viz. ‘ that the mother of the well-known James Hutton and the mother of Dr. Charles Hutton were sisters; and the grandmother of James Hutton and the mother of Sir Isaac Newton were also sisters.’

“ I have ever considered this very distant connexion with so great a man should not be an inducement to lead me into any but casual mention of the circumstance, that I might avoid the imputation of a vain boast; nor would it have been brought forward now, except